**Minds-On Activity:**

**Unit: Chemical Reactions**

**Course: SCH3U**

***Teacher Notes:***

In order to introduce the unit “Chemical Reactions” we created a video showing images of different chemical reactions occurring in both the science laboratory (ie. classroom) and beyond the classroom (real life applications). The videos starts off by showing images of chemical reactions that take place in the laboratory and then follows up with several images of chemical reactions we encounter or hear about occurring in the real world (example the effects of toxic chemicals leaching into lakes, mining ores, base metal smelting from ores etc.) This encourages students to extend their thinking beyond the classroom, and motivates them to think of other examples of chemical reactions occurring in their daily lives. This also ties into STSE and allows us to incorporate it within the unit, because one can start off the unit this way and end the unit with an STSE connection as well. Several of the pictures will have a caption of what is occurring and what the picture is of specifically so students can understand the context better.

***Ministry Expectations:***

*Overall Expectation:*

* **C1.** Analyse chemical reactions used in a variety of applications, and assess their impact on society and the environment

*Specific Expectations:*

* **A1.1** formulate relevant scientific questions about observed relationships, ideas, problems, or issues, make informed predictions, and/or formulate educated hypotheses to focus inquiries or research
* **C2.1** use appropriate terminology related to chemical reactions, including, but not limited to: neutralization, precipitate, acidic, basic [C]
* **C3.1** identify various types of chemical reactions, including synthesis, decomposition, single displacement, double displacement, and combustion

***Scaffolding Questions:***

* What is required/needed for a chemical reaction to happen?
* What are some indications that a chemical reaction has occurred?
* Can you think of some chemicals or reactants in these pictures or the products?
* Are you able to draw some parallels between the chemical reactions occurring in a laboratory and the real life applications?

***Place Mat Activity:***

**Materials:**

* Chart Paper
* Markers
* Pen or pencil for each student

Arrange desks in groups of 4, and hand out a piece of chart paper to each group (3-4 students per group). Ask students to divide the paper into pieces based on the number of members in the group with a central square or circle. Each student will take a particular corner/box on the place mat and will record his/her ideas. After the video the students will discuss and write down the top 3 common ideas or questions in the middle of the place mat. A class discussion will then follow. The place mat can be set up in the following ways:

